

REMARKS

This application has been reviewed in light of the Office Action mailed March 10, 2009. Reconsideration of this application in view of the below remarks is respectfully requested. Claims 1 - 14 are pending in the application with Claim 1 being in independent form. By the present amendment, Claims 1 - 5, 10 and 12 are amended, and Claims 15 and 16 are newly added.

Regarding newly added Claims 15 and 16, support for the features recited therein is found throughout the disclosure as originally filed. In particular, a strut between the top heat radiation panel and the bottom heat radiation panel, as recited in Claim 15, finds support in at least paragraph [0053] of the published application; and a fan attached to at least one of the first cooling panel or the second cooling panel, as recited in Claim 16, finds support in at least FIG. 23 and paragraph [0096]. Therefore, no new subject matter is introduced into the disclosure by way of the present amendment.

I. Rejection of Claims 2 - 5 and 12 Under 35 U.S.C. § 112, second Paragraph

Claims 2 - 5 and 12 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention.

Applicants submit that Claims 2 - 5 and 12 as amended overcome the cited indefiniteness. Therefore, Applicants respectfully request withdrawal of the rejection with respect to Claims 2 - 5 and 12 under 35 U.S.C. § 112, second paragraph.

II. Objection to the Specification

The specification is objected to for failing to provide proper antecedent basis for the claimed subject matter. Specifically, the present Office Action states that the specification fails to provide support for the subject matter recited in Claims 12 and 13, namely “...said first passage has a width smaller than a width of said second passage...” and “...said first passage has a depth larger than a depth of said second passage...”

However, verbatim support is provided in at least paragraph [0014] of the published application. Therefore, Applicants respectfully request withdrawal of the objection to the specification.

III. Rejection of Claims 1 – 6 and 10 – 14 Under 35 U.S.C. § 102(b)

Claims 1 – 6 and 10 – 14 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Publication No. 2003/0189815 (hereinafter, “Lee”).

Lee explicitly discloses a wick disposed within a heatpipe in paragraph [0059] and a micro heatpipe formed without a wick in paragraph [0133]. However, Lee fails to disclose or suggest use of a circulation pump for circulating refrigerant through a heatpipe.

Consequently, Lee fails to properly anticipate a circulation pump for circulating refrigerant through a first passage and a second passage to thereby diffuse heat transferred to a first cooling panel and a second cooling panel, as recited in independent Claim 1.

Moreover, the first and second passages are directly formed on the first and second cooling panels, as recited in Claim 1. Within the scope of the claims, the phrasing “directly formed” is intended to mean that the passages are integrally formed with the respective cooling panels as shown in, for example, FIG. 3, FIG. 6, FIG. 7 and FIG. 11; and described in

corresponding passages in the specification, for example paragraph [0052] of the published application.

Applicants' claimed cooling device has the advantage, over the cooling device described in Lee, of eliminating the space between the metallic tube and the panel. The space present in the Lee device contains air or other gas which have a lower heat conductivity than the metallic tube and panel. Consequently the spaces reduce the heat transport efficiency between the metallic tube and the panel of the Lee device.

In contrast, since the passages are directly formed in the cooling panels there are no spaces between the refrigerant transporting passage and the respective panel; thus the heat transport efficiency of the present invention, as recited in the claims, can be increased over the prior art. Hence, the metallic tube and panel arrangement as disclosed in Lee cannot readily attain the heat transport performance of the present invention.

Therefore, as demonstrated above, because Lee does not disclose each and every element recited in the present claims, Applicants respectfully submit that the rejection has been obviated. Accordingly, Applicants respectfully request withdrawal of the rejection with respect to Claims 1 – 6 and 10 – 14 under 35 U.S.C. § 102(b).

IV. Rejection of Claims 7 – 9 Under 35 U.S.C. § 103(a)

Claims 7 – 9 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over Lee in view of U.S. Patent No. 4,674,565 issued to Beam. Claims 7 – 9 depend from independent Claim 1, and thus include all the limitations recited in that independent claim.

Beam discloses a wick 22, which utilizes capillary action to effectuate fluid flow. However, as in Lee, no mention is made in Beam of a pump of any kind, as understood in the art.

A wick is both structurally and functionally different than a circulating pump, thus one of ordinary skill in the art would not consider a wick to be synonymous with a circulation pump, nor consider substituting a wick as described in Beam for a circulation pump recited in Claim 7.


Consequently, Beam and Lee, taken alone or in any proper combination, fail to disclose or suggest Applicants' recited circulation pump. Therefore, Claims 7 – 9 are believed to be allowable for at least the reasons present with respect to Claim 1. Accordingly Applicants respectfully request withdrawal of the rejection with respect to Claims 7 – 9 under 35 U.S.C. § 103(a) over Lee in view of Beam.

CONCLUSIONS

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1 – 16 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Applicant's undersigned attorney at the number indicated below.

Respectfully submitted,



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